



## LIST OF CONTENTS

VOLUME 32, NUMBER 1

1994

### *Contents*

- |  |   |
|--|---|
|  | 1 Editorial   |
| <b>L. Lang,<br/>S. Doyen-Lang,<br/>A. Charlier, and<br/>M. F. Charlier</b>                           | 3 Calculation of the phonon spectrum and the superconducting critical temperature of $KC_2$   |
| <b>K. Lafdi and<br/>A. Oberlin</b>   | 11 An attempt to characterize and elaborate anisotropic pitches and derived carbon fibers. Part I: Preparation by bubbling  |
| <b>A. Guerrero-Ruiz and<br/>I. Rodríguez-Ramos</b>   | 23 Oxidehydrogenation of ethylbenzene to styrene catalyzed by graphites and activated carbons   |
| <b>D. Michel,<br/>M. Pruski, and<br/>B. C. Gerstein</b>  | 31 NMR of petroleum cokes I: Relaxation studies and quantitative analysis of hydrogen by magnetic resonance   |
| <b>M. Pruski,<br/>B. C. Gerstein, and<br/>D. Michel</b>  | 41 NMR of petroleum cokes II: Studies by high resolution solid state NMR of $^1H$ and $^{13}C$  |
| <b>P. Salatino and<br/>F. Zimbardi</b>   | 51 A fractal approach to the analysis of low-temperature combustion rate of a coal char. II: Model development  |
| <b>K. Lafdi and<br/>A. Oberlin</b>   | 61 An attempt to characterize and elaborate anisotropic pitches and derived carbon fibers. Part II: Preparation by separation   |
| <b>R. B. Mathur,<br/>J. Mittal,<br/>O. P. Bahl, and<br/>N. K. Sandle</b>                             | 71 Characteristics of $KMnO_4$ -modified PAN fibres—its influence on the resulting carbon fibres' properties  |
| <b>H. N. Lei,<br/>A. Métrot, and<br/>M. Troyon</b>   | 79 Scanning tunneling microscopy analysis of a glassy carbon heat treated at $2500^\circ C$   |
| <b>J. R. Kershaw and<br/>P. J. Smart</b>   | 85 Extraction of coal-tar pitch and the effect on carbonization   |
| <b>I. Bautista-Toledo,<br/>J. Rivera-Utrilla,<br/>M. A. Ferro-García, and<br/>C. Moreno-Castilla</b> | 93 Influence of the oxygen surface complexes of activated carbons on the adsorption of chromium ions from aqueous solutions: Effect of sodium chloride and humic acid |
| <b>I. A. Udod,<br/>H. B. Orman, and<br/>V. K. Genchel</b>  | 101 The sodium-graphite system under high-pressure conditions: The comparison with the lithium-graphite system  |

<b>A. Oya, M. Kimura, T. Sugo, A. Katakai, Y. Abe, T. Iizuka, N. Makiyama, A. Linares-Solano, and C. Salinas-Martínez de Lecía</b>	107	Antibacterial activated carbon fiber derived from methyl methacrylate-grafted phenolic resin fiber
<b>M. Matsumoto, T. Hashimoto, K. Murata, and S. Goto</b>	111	Surface modification of carbon whiskers by oxidation treatment
<b>B. T. Kelly and T. D. Burchell</b>	119	The analysis of irradiation creep experiments on nuclear reactor graphite
<b>G. S. Rellick and P. M. Adams</b>	127	TEM studies of resin-based matrix microstructure in carbon/carbon composites
<b>S. Lee, H. Permana, and K. Y. S. Ng</b>	145	Observation by scanning tunneling microscopy of the morphology change of Pt/HOPG after NO-CO reaction
<b>S.-I. Pyun, E.-J. Lee, T.-Y. Kim, S.-J. Lee, Y.-G. Ryu, and C.-S. Kim</b>	155	Role of surface oxides in corrosion of carbon black in phosphoric acid solution at elevated temperature
<b>S.-I. Pyun, Y.-G. Ryu, and S.-H. Choi</b>	161	Corrosion behaviour of platinum-catalyzed carbon in phosphoric acid solution
<b>R.-Y. Qin and J.-B. Donnet</b>	165	Influence of thermal and surface treatments on surface properties of pitch-based carbon fibers studied by inverse gas chromatography
		<i>Letters to the Editor</i>
<b>I. Mochida, S. Kowano, S. Kisamori, H. Fujitsu, and T. Maeda</b>	175	Reduction of low concentration NO with NH <sub>3</sub> over pitch based active carbon fiber in humid air at ambient temperature
<b>T. Ohte, A. Kojima, M. Katoh, K. Kamata, and S. Ohtani</b>	177	Surface characterization of carbon surfaces by cold plasma treatment
<b>A. N. Chuvpyrov, Z. K. Kuvatov, and S. M. Kogarmenov</b>	181	Pyrolysis of dehydrochlorinated PVC: temperature and pressure dependence of conductivity
<b>J. B. Donnet, E. Papirer, W. Wang, and H. F. Stoeckli</b>	185	XPS determination of surface nitrogen species on PAN carbon fibres

<b>D. Cho, J. Y. Lee, and B. I. Yoon</b>	187	The effect of oxidized polyacrylonitrile fiber on the inertia friction properties of carbon/carbon composites
	189	Carbon Calendar

---

## VOLUME 32, NUMBER 2

1994

*Contents*

	191	Editorial
<b>H. Fujimoto, A. Mabuchi, K. Tokumitsu, T. Kasuh, and N. Akuzawa</b>	193	Effect of crystallite size on the chemical compositions of the stage I alkali metal-graphite intercalation compounds
<b>J.-B. Donnet, W.-D. Wang, A. Vidal, and M.-J. Wang</b>	199	Observation of plasma-treated carbon black surfaces by scanning tunneling microscopy
<b>J. Stárek, A. Zukal, and J. Rathouský</b>	207	Comparison of the adsorption of humic acids from aqueous solutions on active carbon and activated charcoal cloths
<b>L. M. Manocha</b>	213	The effect of heat treatment temperature on the properties of polyfurfuryl alcohol based carbon-carbon composites
<b>M. Turpin, T. Cheung, and B. Rand</b>	225	Controlled stress, oscillatory rheometry of a petroleum pitch
<b>M. Miki-Yoshida, R. Castillo, S. Ramos, L. Rendón, S. Tehuacanero, B. S. Zou, and M. José-Yacamán</b>	231	High resolution electron microscopy studies in carbon soots
<b>G. Q. Lu and D. D. Do</b>	247	Comparison of structural models for high-ash char gasification
<b>G. S. Szymański, G. Rychlicki, and A. P. Terzyk</b>	265	Catalytic conversion of ethanol on carbon catalysts
<b>S.-H. Yoon, Y. Korai, I. Mochida, and I. Kato</b>	273	The flow properties of mesophase pitches derived from methylnaphthalene and naphthalene in the temperature range of their spinning
<b>S.-H. Yoon, Y. Korai, and I. Mochida</b>	281	Assessment and optimization of the stabilization process of mesophase pitch fibers by thermal analyses
<b>J.-C. Charlier, X. Gonze, and J.-P. Michenaud</b>	289	First-principles study of the stacking effect on the electronic properties of graphite(s)

<b>J. L. White, M. K. Gopalakrishnan, and B. Fathollahi</b>	301	A processing window for injection of mesophase pitch into a fiber preform
<b>Z. Weishauptová, J. Medek, and Z. Vaverková</b>	311	Study of the porosity of mesophase and its carbonization products
<b>R.-Y. Qin and J.-B. Donnet</b>	323	Study of carbon fiber surfaces by scanning tunneling microscopy, part III. Carbon fibers after surface treatments
<b>T. Watanabe, Y. Ohtsuka, and Y. Nishiyama</b>	329	Nitrogen removal and carbonization of polyacrylonitrile with ultrafine metal particles at low temperatures
<i>Review Article</i>		
<b>M. Monthieux and J. G. Lavin</b>	335	The graphitizability of fullerenes and related textures
<i>Letters to the Editor</i>		
<b>J. P. Armistead, T. M. Keller, and S. B. Sastri</b>	345	Structure and property changes during pyrolysis and an acetylene-terminated resin
<b>P. Davini</b>	349	Molar heat of adsorption on active carbons in close relation to their surface characteristics
<b>H. Preiss and W. Kant</b>	351	A rheological and thermal characterization of carbonaceous hydrogel produced from pitch
<b>R. N. Gimayev, Z. Kh. Kuvatov, and S. M. Kagarmanov</b>	354	Effect of pressure on the electrical conductivity of pyrolysed petroleum pitch
<b>H. Oda, D. Tateisi, K. Esumi, and H. Honda</b>	355	The formation of porous carbon materials from carbonaceous gel
<b>A. T. Balaban, D. J. Klein, and X. Liu</b>	357	Graphite cones
<b>H. Hatori, Y. Yamada, and M. Shiraishi</b>	359	Bursting of graphitized polyimide films through the liberation of included nitrogen
<b>V. M. Linkov, R. D. Sanderson, and G. K. Ivakhuk</b>	361	Microporous carbon layer coated on carbon membranes
<b>X. F. Zhang, X. B. Zhang, G. Van Tendeloo, and G. Meijer</b>	363	"Harmless" carbon tubes around "dangerous" asbestos fibres
<b>M. Berhauer and K. J. Huttering</b>	367	Mechanism of the accelerating effect of carbon dioxide in pitch pyrolysis
<b>Y. Hirohata, M. Okita, T. Hino, and T. Yamashina</b>	369	Desorption behavior for H <sub>2</sub> O from isotropic graphite dipped in water

D. Mehandjiev,  
E. Bakyarova, and  
R. Nicholov

372 Micropore size distribution by a simplified equation

375 Carbon Calendar

---

VOLUME 32, NUMBER 3

1994

*Contents*

- 377 Obituary: Brian Thomas Kelly
- H. A. Katzman,  
P. M. Adams,  
T. D. Le, and  
C. S. Hemminger 379 Characterization of low thermal conductivity PAN-based carbon fibers
- M. Liu and  
J. M. Cowley 393 Structures of the helical carbon nanotubes
- A. R. Chughtai,  
S. A. Gordon, and  
D. M. Smith 405 Kinetics of the hexane soot reaction with  $\text{NO}_2/\text{N}_2\text{O}_4$  at low concentration
- T. Budinova,  
N. Petrov,  
S. Duber, and  
E. Shebestova 417 EPR investigation of oxidized anthracite
- D. Cazorla-Amorós,  
A. Linares-Solano,  
C. Salinas-Martínez  
de Lecéa, and  
F. Kapteijn 423 Assessment of the  $\text{CO}_2$ -carbon gasification catalyzed by calcium. A transient isotopic study
- M. S. Seehra,  
A. S. Pavlovic,  
V. S. Babu,  
J. W. Zondlo,  
P. G. Stansberry, and  
A. H. Stiller 431 Measurements and control of anisotropy in ten coal-based graphites
- F. Cataldo 437 Photochlorination of  $\text{C}_{60}$  and  $\text{C}_{70}$  fullerenes
- T. A. Braymer,  
C. G. Coe,  
T. S. Farris,  
T. R. Gaffney,  
J. M. Schork, and  
J. N. Armor 445 Granular carbon molecular sieves
- K. E. Yoon,  
E. S. Lee,  
Y. Korai,  
I. Mochda,  
K. Yanagida, and  
K. Tate 453 Comparison of mesophase pitches derived from C8 and C9 aromatic hydrocarbons

<b>D. Petitjean, M. Klatt, G. Furdin, and A. Hérold</b>	461	Exfoliation exothermique des composés d'insertion du carbone contenant de l'acide perchlorique
<b>T. Nakajima and Y. Matsuo</b>	469	Formation process and structure of graphite oxide
<b>P. E. Nolan, D. C. Lynch, and A. H. Cutler</b>	477	Catalytic disproportionation of CO in the absence of hydrogen: Encapsulating shell carbon formation
<b>M. Zayat, D. Davidov, and H. Selig</b>	485	Fluorination of carbon fibers by halogen fluorides
<b>J. Cao, A. N. Buckley, and L. J. Lynch</b>	493	Measurement of an intrinsic softening temperature for coal-tar pitch by proton magnetic resonance thermal analysis
<b>B. T. Kelly and T. D. Burchell</b>	499	Structure-related property changes in polycrystalline graphite under neutron irradiation
<b>S. Subramoney, R. S. Ruoff, D. C. Lorents, B. Chan, R. Malhotra, M. J. Dyer, and K. Parvin</b>	507	Magnetic separation of GdC <sub>2</sub> encapsulated in carbon nanoparticles
<b>Z.-M. Wang, N. Shindo, Y. Otake, and K. Kaneko</b>	515	Enhancement of NO adsorption on pitch-based activated carbon fibers by dispersion of CU-doped $\alpha$ -FeOOH fine particles
<b>S. Hazourli, G. Bonnacaze, and M. Astruc</b>	523	Influence de divers traitements sur les groupements oxygènes superficiels et le potentiel d'un charbon actif en grains
<i>Letters to the Editor</i>		
<b>P. Ehrburger, F. Rabillaud, and J. Dentzer</b>	537	Effect of chlorine on the oxidation rate of carbon fibres
<b>Q.-L. Zhuang, T. Kyotani, and A. Tomita</b>	539	The change of TPD pattern of O <sub>2</sub> -gasified carbon upon air exposure
<b>V. V. Avdeev, L. A. Monyakina, and I. V. Nikol'skaya</b>	541	The potentiometric investigations of graphite hydrogen-sulfate chemical synthesis (oxidizer-(NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub> )
<b>M. V. Ellacott, L. S. K. Pang, L. Prochazka, M. A. Wilson, J. D. Fitz Gerald, and G. H. Taylor</b>	542	Composition of cathode deposits during fullerene production by carbon arc plasma
	545	Carbon Calendar

*Contents**Papers presented at the 21st Biennial Conference on Carbon, Buffalo, NY, June 13-18, 1993*

- G. Collin and B. Bujnowska 547 Co-carbonization of pitches with coal mixtures for the production of metallurgical cokes
- G. B. Neighbour and B. McEnaney 553 Creep and recovery in graphites at ambient temperature: An acoustic emission study
- N. Koprinarov, M. Konstantinova, and G. Pchelarov 559 Growth of plasma pyrolytic carbon
- K. Kawamura, S. Shiono, and T. Watabe 563 Feature of combustion and morphology of soot produced from a cure mixture of  $\text{NH}_4\text{ClO}_4$ /resin
- G. G. Tibbetts, C. A. Bernardo, D. W. Gorkiewicz, and R. L. Alig 569 Role of sulfur in the production of carbon fibers in the vapor phase

- M. Suzuki 577 Activated carbon fiber: Fundamentals and applications

*Regular Articles*

- H. Preiss, G. Lischke, R. Eckelt, H. Miessner, and K. Meyer 587 Preparation of carbon catalysts by hydrothermal treatment of a carbonaceous hydrogel
- R. Fu, H. Zeng, and Y. Lu 593 Studies on the mechanism of the reaction of activated carbon fibers with oxidants
- G. Furdin, D. Begin, J. F. Mareche, D. Petitjean, E. Alain, and M. Lelaurain 599 Some aspects of carbonization of mixtures containing coal tar pitch and graphite  $\text{FeCl}_3$  compounds
- W.-C. J. Wei and T.-M. Wu 605 Oxidation of carbon/carbon composite coated with  $\text{SiC}-(\text{Si}/\text{ZrSi}_2)\text{-ZrSi}_2$
- M. Shioya and A. Takaku 615 Rotation and extension of crystallites in carbon fibers by tensile stress
- J. R. Simms and C. Q. Yang 621 Infrared spectroscopy studies of the petroleum pitch carbon fiber—II. The distribution of the oxidation products between the surface and the bulk
- T. Kyotani, H. Yamada, N. Sonobe, and A. Tomita 627 Heat treatment of polyfurfuryl alcohol prepared between taeniolite lamellae



<b>M. Inagaki, Y. Hishiyama, and Y. Kaburagi</b>	637	Effect of heating rate during carbonization on graphitization of carbon films derived from aromatic polyimides
<b>A. K. Stark, L. A. Berglund, M. Tagawa, and N. Ohmae</b>	641	Effect of atomic oxygen on the mechanical properties of highly graphitized carbon fibers
<b>Y. Hishiyama, M. Nakamura, Y. Nagata, and M. Inagaki</b>	645	Graphitization behavior of carbon film prepared from high modulus polyimide film: Synthesis of high-quality graphite film
<b>J. A. Newell, D. K. Rogers, D. D. Edie, and C. C. Fain</b>	651	Direct carbonization of PBO fiber
<b>T. J. Bandoz, K. Putyera, J. Jagiello, and J. A. Schwarz</b>	659	Study of carbon-smectite composites and carbons obtained by in situ carbonization of polyfurfuryl alcohol
<b>K. Yamada and A. B. Sawaoka</b>	665	Very small spherical crystals of distorted diamond found in a detonation product of explosive/graphite mixtures and their formation mechanism
<b>P. Vinke, M. van der Eijk, M. Verbree, A. F. Voskamp, and H. van Bekkum</b>	675	Modification of the surfaces of a gas-activated carbon and a chemically activated carbon with nitric acid, hypochlorite, and ammonia
<b>J. Jagiello, T. J. Bandoz, and J. A. Schwarz</b>	687	Study of carbon microstructure by using inverse gas chromatography
<b>K. Gergova, N. Petrov, and S. Eser</b>	693	Adsorption properties and microstructure of activated carbons produced from agricultural by-products by steam pyrolysis
<b>V. R. Deitz and C. J. Karwacki</b>	703	Chemisorption of cyano-containing vapors by metal-ligand structures adsorbed by activated carbon
<b>P. Scharff, W. Bischof, S. Ebinal, C. Ehrhardt, R. Gerken, V. Kaiser, F. Menzel, and C. Tanke</b>	709	Oxidation of buckminsterfullerene C <sub>60</sub> in brönsted-acids
<b>K. Kogure, G. Sines, and J. G. Lavin</b>	715	Structural studies of postcreep, PAN-based, carbon filaments
<b>D. F. Pedraza and J. Koike</b>	727	Dimensional changes in grade H-451 nuclear graphite due to electron irradiation



<b>P. G. Klemens and D. F. Pedraza</b>	735	Thermal conductivity of graphite in the basal plane
<i>Letters to the Editor</i>		
<b>J. Rivera-Utrilla, M. A. Ferro-García, and C. Moreno-Castilla</b>	743	Thermal desorption of chlorophenols from activated carbon. Influence of the treatment atmosphere
<b>J. M. Cowley, M.-Q. Liu, B. L. Ramakrishna, T. S. Peace, A. K. Wertsching, and M. R. Pena</b>	746	A new type of metal-fulleride structure: C <sub>60</sub> Pd <sub>3</sub>
<b>M. El Gadi, C. Hérold, and P. Lagrange</b>	749	Des doubles couches de potassium insérées dans le graphite: Synthèse de composés de stades 1, 2, 3, et 4
	752	Editorial Announcement
	753	Carbon Calendar
	755	Errata

## VOLUME 32, NUMBER 5

1994

*Contents*

	757	Editorial
<i>Review Article</i>		
<b>H. P. Boehm</b>	759	Some aspects of the surface chemistry of carbon blacks and other carbons
<i>Regular Articles</i>		
<b>P. Samaras, E. Diamadopoulos, and G. P. Sakellaropoulos</b>	771	Acid treatment of lignite and its effect on activation
<b>V. T. Lukjanova and R. V. Lovzova</b>	777	Carbon fibers in nature
<b>M. R. Alexander and F. R. Jones</b>	785	Effect of electrolytic oxidation on the surface chemistry of type A carbon fibres—Part I, X-ray photoelectron spectroscopy
<b>M. T. Beck, J. C. Fetzer, and S. Kéki</b>	795	Formation of PAHs and C <sub>60</sub> as intermediates in the carbonization of liquid benzene and toluene upon the effect of electric discharges
<b>K. Kanno, K. E. Yoon, J. J. Fernandez, I. Mochida, F. Fortin, and Y. Korai</b>	801	Effects of carbon black addition on the carbonization of mesophase pitch

<b>P. Demirev, G. Brinkmalm, J. Eriksson, P. Håkansson, R. Papaléo, R. Zubarev, and B. U. R. Sundqvist</b>	809	Formation and sputtering of fullerenes by MeV atomic ions
<b>L. C. Pardini and B. McEnaney</b>	815	Effects of fibre surface treatment on fracture and acoustic emission from single and hybrid CFRC
<b>T. Nishikawa, M. Higashiguchi, and M. Takatsu</b>	825	Cyclic fatigue properties of isotropic graphite at elevated temperatures
<b>I. Rannou, V. Bayot, and M. Lelaurain</b>	833	Structural characterization of graphitization process in pyrocarbons
<b>B. P. Russell and M. D. LeVan</b>	845	Pore size distribution of BPL activated carbon determined by different methods
<b>F. Durand, D. Rouby, G. Fantozzi, B. Allard, and D. Dumas</b>	857	Characterization of the high-temperature mechanical behaviour of carbon materials
<b>N. Petrov, M. Razvigorova, T. Budinova, and K. Siskov</b>	867	The role of the adsorption interaction between pitch and filler in the process of baking of carbon/carbon composites
<b>V. L. Kuznetsov, A. L. Chuvilin, E. M. Moroz, V. N. Kolomiichuk, Sh. K. Shaikhutdinov, Yu. V. Butenko, and I. Yu. Mal'kov</b>	873	Effect of explosion conditions on the structure of detonation soots: Ultradisperse diamond and onion carbon
<b>K. A. Grant, Q. Zhu, and K. M. Thomas</b>	883	Nitrogen release in the gasification of carbons
<b>J. M. Martín-Martínez, L. Singoredjo, M. Mittelmeijer-Hazeleger, F. Kapteijn, and J. A. Moulijn</b>	897	Selective catalytic reduction of NO with NH <sub>3</sub> over activated carbons. I: Effect of origin and activation procedure on activity
<b>A. J. McMillan, B. C. Jones, G. R. Evans, and M. I. Darby</b>	905	Efficient calculation of forces and stresses due to transverse impact of polycrystalline graphite beams
<b>R. Venkateswaran, M. H. Back, and G. Scacchi</b>	911	The dual nature of carbon: Catalyst and inhibitor

M. P. Silva, C. Santos, G. M. Gualberto, and A. Hengeltraub	921	Electrical resistivity in the <i>c</i> -axis direction of the ZnCl <sub>2</sub> graphite intercalation acceptor compound
M. De Sanctis, S. Pelletier, Y. Bienvenu, and M. Guigon	925	On the formation of interfacial carbides in a carbon fibre-reinforced aluminium composite
Yu. A. Eltekov	931	Adsorption of macromolecules of elastomers on carbon black
X. Zhou, Z. Gu, Y. Wu, Y. Sun, Z. Jin, Y. Xiong, B. Sun, Y. Wu, H. Fu, and J. Wang	935	Separation of C <sub>60</sub> and C <sub>70</sub> fullerenes in gram quantities by fractional crystallization
H. Peterlik, P. Fratzl, and K. Kromp	939	Pore structure of carbon/carbon composites studied by small-angle X-ray scattering
K. Azami, S. Yamamoto, and Y. Sanada	947	Kinetics of mesophase formation of petroleum pitch
A. Gupta and I. R. Harrison	953	Small-angle X-ray scattering (SAXS) in carbonized phenolic resins
I. Mochida, R. Fujiura, T. Kojima, H. Sakamoto, and K. Kanno	961	Self-adhesive carbon grains oxidatively prepared from naphthalene-derived mesophase pitch for mould of high density
C. P. Ju, K. J. Lee, H. D. Wu, and C. I. Chen	971	Low-energy wear behavior of polyacrylonitrile, fiber-reinforced, pitch-matrix, carbon-carbon composites
F. Fortin, S.-H. Yoon, Y. Korai, and I. Mochida	979	Reorganization of molecular alignment in naphthalene and methyl-naphthalene derived pitches
K. M. Thomas, J. M. Lewis, S. H. Bottrell, S. P. Dean, and J. Foulkes	991	Isotope fractionation in the synthesis of fullerenes
J. Bermejo, M. Granda, R. Menéndez, and J. M. D. Tascón	1001	Comparative analysis of pitches by extrography and thermal analysis techniques

<b>P. Melinon, V. Paillard, V. Dupuis, J. P. Perez, A. Perez, and G. Panczer</b>	1011	Synthesis of diamond nanocrystallites using the low-energy cluster beam deposition; an indirect proof of small fullerene existence?
<i>Letters to the Editor</i>		
<b>A. G. Pandolfo, M. Amini-Amoli, and J. S. Killingley</b>	1015	Activated carbons prepared from shells of different coconut varieties
<b>V. A. Nalimova and K. N. Semenenko</b>	1019	Alkali metal state in graphite intercalation compounds obtained under high pressures
<b>J. Madarász, G. Pokol, S. Kéki, and M. T. Beck</b>	1023	Comparative thermogravimetric study of the air oxidation of different carbons
<b>K. N. Semenenko, S. N. Klyamkin, V. A. Nalimova, and A. A. Karikh</b>	1025	Intercalation of hydrogen into potassium-graphite under high gas pressures
<b>J. Jagiello, T. J. Badosz, and J. A. Schwarz</b>	1026	Carbon surface characterization in terms of its acidity constant distribution
	1029	Current By-Laws of the American Carbon Society
	1030	Proposed By-Laws of the American Carbon Society
	1032	Carbon Calendar

*Contents*

	1033	Editorial
<i>Regular Articles</i>		
<b>N. El Horr, C. Bourgerette, and A. Oberlin</b>	1035	Mesophase powders (carbonization and graphitization)
<b>D. D. Edie, K. E. Robinson, O. Fleurot, S. P. Jones, and C. C. Fain</b>	1045	High thermal conductivity ribbon fibers from naphthalene-based mesophase
<b>S. Cooke and M. M. Labes</b>	1055	Destruction of the environmentally hazardous monochlorinated phenols via pyrolysis in an inert atmosphere
<b>S. Doyen-Lang, L. Lang, A. Charlier, M. F. Charlier, and E. McRae</b>	1059	Calcul des énergies et transferts de charge des mercurographitures $\text{KHgC}_4$ et $\text{RbHgC}_4$ par une méthode quantique

- K. Amine,**  
**T. Nakajima, and**  
**M. Motoyama** 1067 Structure of fluorine-graphite intercalation compounds synthesized in gaseous and anhydrous liquid hydrogen fluoride with fluorine gas
- M. Bernhauer,**  
**M. Braun, and**  
**K. J. Hüttinger** 1073 Kinetics of mesophase formation in a stirred tank reactor and properties of the products—V. Catalysis by ferrocene
- W. R. Hoffmann and**  
**K. J. Hüttinger** 1087 Sintering of powders of polyaromatic mesophase to high-strength isotropic carbons—I. Influence of the raw material and sintering conditions on the properties of the carbon materials
- A. Gschwindt and**  
**K. J. Hüttinger** 1105 Sintering of powders of polyaromatic mesophase to high-strength isotropic carbons—II. Influences of the synthesis conditions of the mesophases and the preparation of the powders
- F. Fortin,**  
**S. H. Yoon,**  
**Y. Korai, and**  
**I. Mochida** 1119 Structure and properties of thin, slit-shaped carbon fibers prepared from mesophase pitch
- J. Kouvetakis,**  
**M. W. McElfresh, and**  
**D. B. Beach** 1129 Chemical vapor deposition of highly conductive boron-doped graphite from triphenyl boron
- J. Mittal,**  
**O. P. Bahl,**  
**R. B. Mathur, and**  
**N. K. Sandle** 1133 IR studies of PAN fibres thermally stabilized at elevated temperatures
- A. Tanaka,**  
**H. Matsumoto,**  
**C. Yamaguchi, and**  
**K. Tokumitsu** 1137 Characterization of pitches by ultrasonic method—I. Apparatus and preliminary results
- R. G. Cnossen,**  
**S. Lee, and**  
**A. Sacco, Jr.** 1143 Carbon deposition over transition metal alloys—I. Generation of  $\langle\text{NiCo}\rangle$ ,  $\langle\text{FeNi}\rangle$ , and  $\langle\text{CoFe}\rangle$  phase diagrams
- F. W. A. H. Geurts,**  
**R. G. Cnossen,**  
**A. Sacco, Jr., and**  
**R. R. Biederman** 1151 Carbon deposition over transition metal alloys—II. Kinetics of deposition over  $\langle\text{FeNi}\rangle$  and  $\langle\text{FeCo}\rangle$  alloy foils
- G. A. R. Bessant and**  
**P. L. Walker, Jr.** 1171 Activation of anthracite: Using carbon dioxide versus air

*Letters to the Editor*

- T. Nakajima,**  
**Y. Matsuo,**  
**S. Kasamatsu, and**  
**K. Nakanishi** 1177 Carbon-fluorine bonding of fullerene  $\text{C}_{60}$  fluorinated by elemental fluorine, with HF gas, under UV irradiation and in chlorofluoro-carbon solvent
- Y. Wu,**  
**Y. Sun,**  
**Z. Gu,**  
**X. Zhou,**  
**Y. Xiong,**  
**B. Sun, and**  
**Z. Jin** 1180 A combined recrystallization and preparative liquid chromatographic method for the isolation of pure  $\text{C}_{70}$  fullerene

<b>S.-H. Yoon, Y. Korai, and I. Mochida</b>	1182	Pleat structure of the mesophase pitch-based carbon fiber
<b>G. X. Li, Y. Nishi, S. Ozeki, and K. Kaneko</b>	1186	N <sub>2</sub> formation from NO over Pt-electrodeposited activated carbon fiber
<b>Y. Murakami K. Esumi, and H. Honda</b>	1188	Preparation of the electrocatalytic electrode coating using amphiphilic carbonaceous material containing platinum compound
	1190	Carbon Calendar

*Contents*

<b>N. Ikemiya, Y. Okazaki, S. Hara, and T. Nakajima</b>	1191	Cleaved surface structures of CuCl <sub>2</sub> - and FeCl <sub>3</sub> -graphite intercalation compounds detected by atomic force microscopy
<b>K. Yamada, G. Burkhard, K. Dan, Y. Tanabe, and A. B. Sawaoka</b>	1197	Microstructures of carbon polymorphs formed in shocked compressed diamond powder utilizing an interaction of oblique shock waves
<b>F. Gao, J. W. Patrick, and A. Walker</b>	1215	Multiple CVD densification of PAN-based carbon-fibre reinforced carbon laminates
<b>F. Kapteijn, R. Meijer, J. A. Moulijn, and D. Cazorla-Amorós</b>	1223	On why do different carbons show different gasification rates: A transient isotopic CO <sub>2</sub> gasification study
<b>A. Shindo and K. Izumino</b>	1233	Structural variation during pyrolysis of furfuryl alcohol and furfural-furfuryl alcohol resins
<b>D. Ugarte</b>	1245	High-temperature behaviour of "fullerene black"
<b>H. Fujimoto, K. Tokumitsu, A. Mabuchi, T. Kasuh, and M. Shiraishi</b>	1249	New structural parameters for carbon: Comprehensive crystallization index and cavity index
<b>M. Inagaki and M. Nakashima</b>	1253	Graphite exfoliated at room temperature and its structural annealing
<b>M. Molina-Sabio, V. Pérez, and F. Rodríguez-Reinoso</b>	1259	Impregnation of activated carbon with chromium and copper salts: Effect of porosity and metal content

<b>D. Loustalet, A. Oberlin, and M. Moreau</b>	1267	Peculiar process of coal tar pitch carbonization (textural and physicochemical characterization)
<b>J. Alcañiz-Monge, D. Cazorla-Amorós, A. Linares-Solano, S. Yoshida, and A. Oya</b>	1277	Effect of the activating gas on tensile strength and pore structure of pitch-based carbon fibres
<b>F. S. Cannon, V. L. Snoeyink, R. G. Lee, and G. Dagois</b>	1285	Reaction mechanism of calcium-catalyzed thermal regeneration of spent granular activated carbon
<i>Papers presented at the Second International Conference on Carbon Blacks, Mulhouse, France, September, 1993</i>		
<b>P. Ehrburger and P. A. Throver</b>	1303	Preface
<b>J.-B. Donnet</b>	1305	Fifty years of research and progress on carbon black
<b>K. S. W. Sing</b>	1311	Physisorption of gases by carbon blacks
<b>J. Lahaye and F. Ehrburger-Dolle</b>	1319	Mechanisms of carbon black formation. Correlation with the morphology of aggregates
<b>F. Fillaux, R. Papoular, A. Lautié, and J. Tomkinson</b>	1325	Inelastic neutron-scattering study of the proton dynamics in carbons and coals
<b>F. Bonnefoy, P. Gilot B. R. Stanmore, and G. Prado</b>	1333	A comparative study of carbon black and diesel soot reactivity in the temperature range 500–600°C—Effect of additives
<b>E. Papirer, R. Lacroix, J.-B. Donnet, G. Nanse, and P. Fioux</b>	1341	XPS study of the halogenation of carbon black—Part 1. Bromination
<b>H. F. Stoeckli, D. Huguenin, and A. Laederach</b>	1359	On the characterization of carbon blacks by various techniques
<b>F. Ehrburger-Dolle, J. Lahaye, and S. Misono</b>	1363	Percolation in carbon black powders
<b>R. C. Sosa, D. Masy, and P. G. Rouxhet</b>	1369	Influence of surface properties of carbon black on the activity of adsorbed catalase
<b>T. Gruber, T. W. Zerda, and M. Gerspacher</b>	1377	Raman studies of heat-treated carbon blacks



*Letters to the Editor*

- |  |      |  |
|--|------|--|
| <b>W. P. Hoffman,<br/>M. B. Fernandez, and<br/>M. B. Rao</b>         | 1383 | Characterization of porosity in nanoporous carbons using scanning tunneling microscopy                         |
| <b>D. Loustalet,<br/>A. Oberlin, and<br/>M. Moreau</b>               | 1384 | Comparison between two green cokes obtained from coal tar pitch and petroleum pitch                            |
| <b>Y. Uchiyama,<br/>S. Arakio,<br/>H. Sano, and<br/>K. Kobayashi</b> | 1388 | Abrupt change with HTT in lattice parameter of petroleum coke and natural graphite mixed with LaB <sub>6</sub> |
| <b>J. D. Fitz Gerald,<br/>G. H. Taylor, and<br/>G. M. Pennock</b>    | 1389 | Microstructure of hydrogenated coal-tar pitches  |
|  | 1396 | Carbon Calendar  |
|  | 1397 | Nominations for awards invited Carbon journal prize (Pergamon)   |

## VOLUME 32, NUMBER 8

1994

*Contents*

- |   |      |   |
|---|------|---|
| <b>H. Darmstadt,<br/>C. Roy, and<br/>S. Kaliaguine</b>                      | 1399 | ESCA characterization of commercial carbon blacks and of carbon blacks from vacuum pyrolysis of used tires                              |
| <b>M. T. González,<br/>M. Molina-Sabio, and<br/>F. Rodríguez-Reinoso</b>    | 1407 | Steam activation of olive stone chars, development of porosity  |
| <b>Y. Zhang,<br/>F. Zhang, and<br/>G. Chen</b>                              | 1415 | A study of phase transformation between diamond and graphite in P-T diagram of carbon   |
| <b>C. W. Jones and<br/>W. J. Koros</b>                                      | 1419 | Carbon molecular sieve gas separation membranes-I. Preparation and characterization based on polyimide precursors                       |
| <b>C. W. Jones and<br/>W. J. Koros</b>                                      | 1427 | Carbon molecular sieve gas separation membranes-II. Regeneration following organic exposure   |
| <b>R. Qadeer and<br/>J. Hanif</b>   | 1433 | Kinetics of zirconium ions adsorption on activated charcoal from aqueous solutions  |
| <b>C. Hung and<br/>D. Kucera</b>  | 1441 | Graphite intercalation compound with iodine as the major intercalate  |
| <b>I. J. Davies and<br/>R. D. Rawlings</b>                                  | 1449 | Mechanical properties in flexure and tension of low density carbon-carbon composites  |
| <b>A. W. Morawski,<br/>K. Kalucki,<br/>M. Nakashima, and<br/>M. Inagaki</b> | 1457 | Modified carbonization of polyacrylonitrile by incorporation of FeCl <sub>2</sub> and Fe(NO <sub>3</sub> ) <sub>3</sub> —pore structure |

- T. A. Centeno and F. Stoeckli** 1463 On the activation of asturian anthracite following various pretreatments
- K. Kogure, G. Sines, and J. G. Lavin** 1469 Microstructure and texture of pitch-based carbon fibers after creep deformation
- A. Tressaud, V. Gupta, L. Piraux, L. Lozano, E. Marquestaut, S. Flandrois, A. Marchand, and O. P. Bahl** 1485 Fluorine-intercalated carbon fibers-I. Structural and transport properties
- M. G. Lussier, J. C. Shull, and D. J. Miller** 1493 Activated carbon from cherry stones
- C. A. Frysz, X. Shui, and D. D. L. Chung** 1499 Effect of chemisorbed oxygen on the electrochemical behavior of graphite fibers
- R. J. J. Jansen and H. van Bekkum** 1507 Amination and ammoxidation of activated carbons
- K. Yoshizawa, K. Okahara, T. Sato, K. Tanaka, and T. Yamabe** 1517 Molecular orbital study of pyrolytic carbons based on small cluster models
- A. Cuesta, P. Dhamelincourt, J. Laureyns, A. Martínez-Alonso, and J. M. D. Tascón** 1523 Raman microprobe studies on carbon materials

*Letters to the Editor*

- L. Kavan and J. Kastner** 1533 Carbyne forms of carbon: Continuation of the story
- J. Rodriguez, F. Ruette, and J. Laine** 1536 Molecular modeling of micropores in activated carbon
- X. B. Zhang and S. Amelinckx** 1537 On the measurements of the helix angles of carbon nanotubes
- F. Ikazaki, S. Ohshima, K. Uchida, Y. Kuriki, H. Hayakawa, M. Yumura, K. Takahashi, and K. Tojima** 1539 Chemical purification of carbon nanotubes by use of graphite intercalation compounds

<b>S. Y. Cho</b>	1542	Adsorption of chlorofluorocarbons on microporous carbon fiber
<b>Y. Nakayama, H. Nagao, I. Mochida, and Y. Kawabuchi</b>	1544	Adsorption of radon on active carbon
	1548	Carbon Calendar Carbon Journal Prize (Pergamon)
	I	Volume 32 Contents and Author Index

